

Work Order ID 136712

Wednesday, September 02, 2015 2:45:14 PM

136712

PRELIMINARY ISSUE

Page 1

Item ID: D3537-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Wearpad **POSITIVE**
 Start Date: 9/1/2015 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 9/1/2015 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: MLJ Date: SEP 01 2015 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3537	DAS 9-89 PES 15-11-13 Rev E DAS 9-89								
110	FLOW WATER JET	0.00							
110									
Waterjet	Memo	0.02							
FLOW CNC Waterjet	1-Cut D3537-1 as per Dwg D3537								
	Dwg Rev: PES PD 15-11-13								
	Prog Rev: PES								
	2-Deburr if necessary								
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120									
QC	Memo	0.01							
Quality Control									

(50)

DE 15/09/28

(50)

DE 15/09/28

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OCT 05 2015

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Work Order update only ☐

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Work Order ID 136712***136712***

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Item ID: D3537-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wearpad
Start Date: 9/1/2015 Start Qty: 50.00 ***50*** Cust Item ID:
Required Date: 9/1/2015 Req'd Qty: 50.00 ***50*** Customer:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* Large Fab Large Fab	Weld per dwg A/R Hardcoat S.S. Batch: _____ Large Fab Memo A/R 2059B Hardcoat BATCH: _____ <i>Sodel 8259 M133209</i>	0.00 0.05				<u>45</u>	<u>EL 15-16-8</u>		
170 *170* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.01				<u>45</u>			DAS 38 9-89 OCT 13 2015
180 *180* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.02				<u>45</u>			DAS 38 9-89 OCT 13 2015

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Qty of 5 wearpads were scrapped due to machine malfunction. x1- Wire reel ran out of wire. x2- Were scrapped while machine was in operation, wire went spaghetti in wire feeder. x3- Contact tip was faulty.				Lead hand/ Supervisor Approval/ Verification 9-89 OCT 13 2015																																																																
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Revision ID: Stop ***NS2***
Item Name: Wearpad
Start Date: 9/1/2015 Start Qty: 50.00 ***50*** Cust Item ID:
Required Date: 9/1/2015 Req'd Qty: 50.00 ***50*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Identify as per dwg & Stock Location: <u>PRELIM</u>	0.00							
210									DAS
Packaging	Memo	0.01							38
Packaging	LOCATION : FP001								9-89
									15-10-02
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.08							
Quality Control									MLG 15-11-13

POSITIVE RECALL
EFFECTIVE _____ AUTH _____
RELEASED 10 DATE 15-12-15
Rev E
ECN/15-651

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

Picklist Print

Wednesday, September 02, 2015 2:45:13 PM

Page 1

Work Order ID: 136712

136712

Parent Item: D3537-1

D3537-1

Parent Item Name: Wearpad

Start Date: 9/1/2015

Required Date: 9/1/2015

Start Qty: 50.00

Required Qty: 50.00

Comments: IPP Rev:A New Issue 07-02-14 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S16GA		Purchased	No			100	sf	282.3900	0.106	5.578947			

M304S16GA

304/316 Sheet .063

DE 15/10/02

Location

Loc Qty

Loc Code

MAT019

282.39

m131384

35.2

m131503

21.19

m132797

64

m132835

162

6

DQA: _____ Date: _____



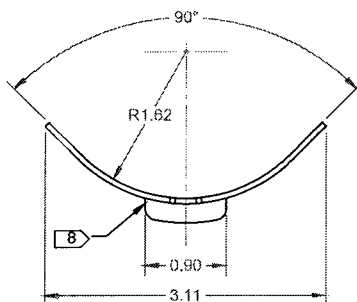
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

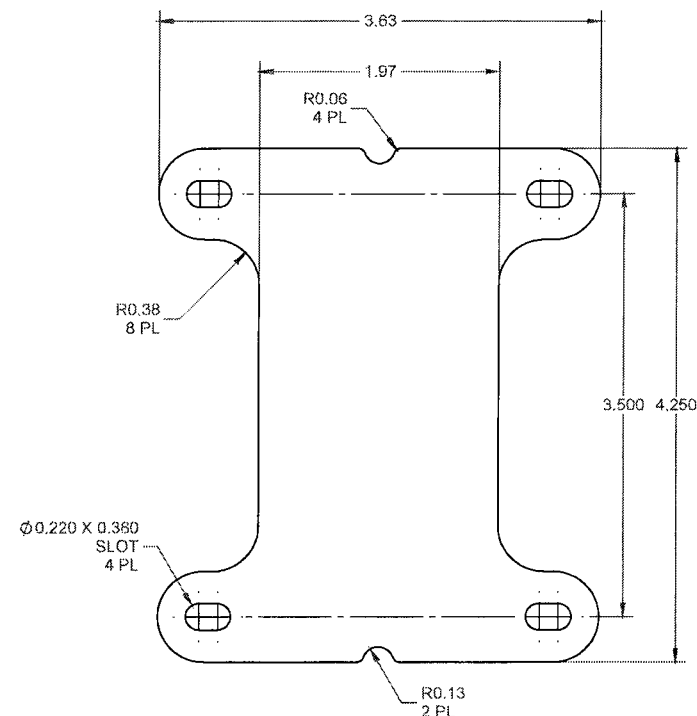
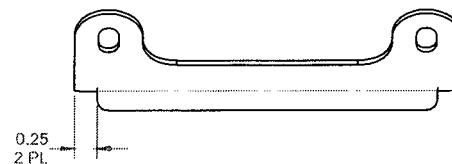
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

PRELIMINARY ISSUE



D3537-1 WEARPAD



**D3537-1F WEARPAD
(FLAT PATTERN)**

NOTES:

- 1) MATERIAL -1: MAKE FROM -1F
-1F: AISI 304/316 SS SHEET ANNEALED, 16 GAUGE (0.063) PER MIL-S-5059 OR AMS 5513 (304)
OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 PER DART SPEC M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.42 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR
BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

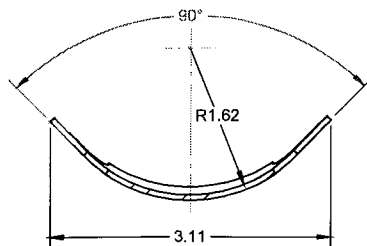


PRELIMINARY ISSUE

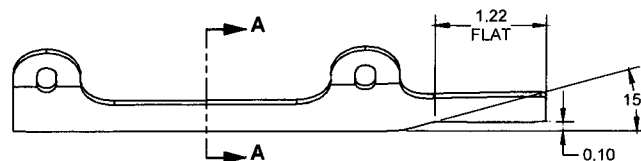
E	-5 DELETED PART IS OBSOLETE. RE-FORMAT. NOTE 8 RE-WRITTEN FOR ROBOTIC WELDING.	AJS	15.09.28
D	RE-FORMAT DRAWING. ADD -9/-11 WEARPADS	DB	14.10.16
C	WIDEN TAB TO 0.380, WEL PATTERN	CB	07.04.13
B	ADD AMS5510 AND AMS 5524	CB	07.03.20
A	NEW ISSUE	CB	06.11.06
REV.	DESCRIPTION	BY	DATE
DESIGN	CB	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO. D3537	
MFG. APPR.	DD		
APPROVED		TITLE WEARPAD	
DE APPR.			
DATE	15.09.28	SCALE NTS	
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A

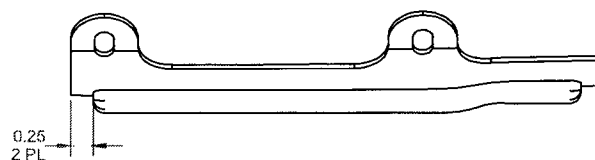
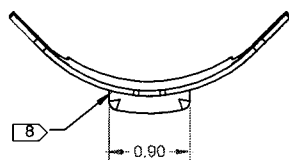
B5



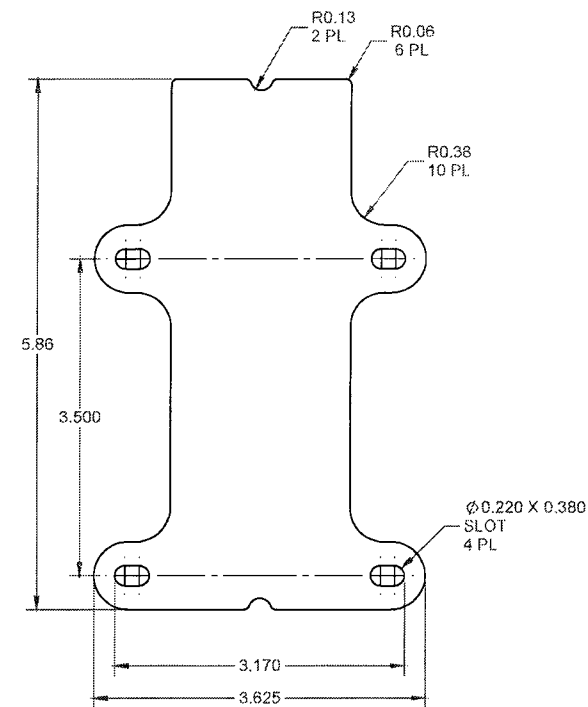
SECTION A-A



D3537-3 WEARPAD
(BENDING DETAIL)
(MAKE FROM D3537-3F)



D3537-3 WEARPAD
(WELDMENT)



D3537-3F WEARPAD
(FLAT PATTERN)

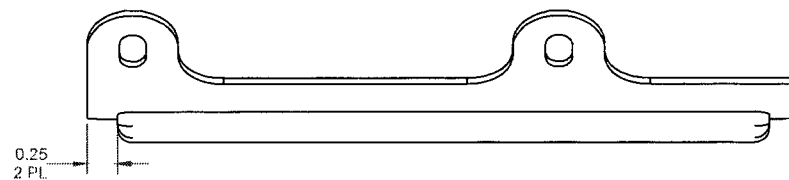
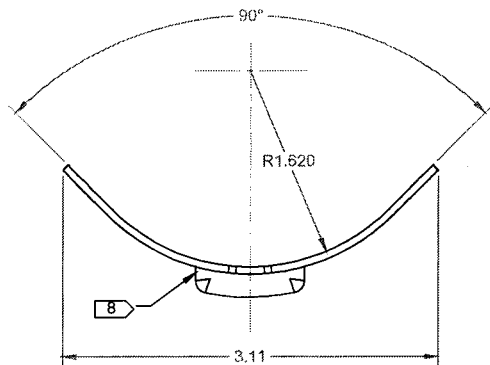
NOTES:

- 1) MATERIAL: -3: MAKE FROM -3F
-3F: AISI 304/316 SS SHEET ANNEALED, 16 GAUGE (0.063) PER MIL-S-5059 OR AMS 5513 (304)
OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 PER DART SPEC M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.50 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR
BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)



PRELIMINARY ISSUE

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MFG. APPR.	DD	D3537	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		WEARPAD	NTS
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D3537-7 WEARPAD
(MAKE FROM D3537-3F)

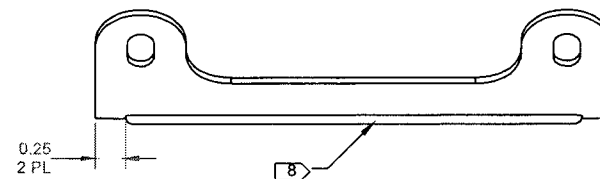
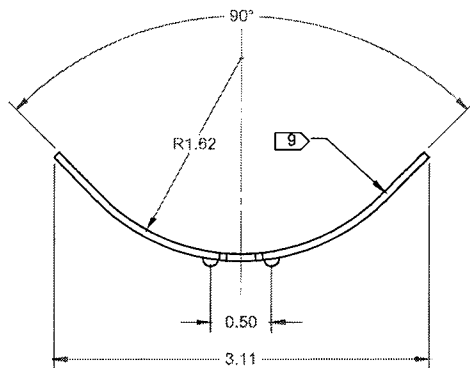
NOTES:

- 1) MATERIAL: MAKE FROM -3F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.50 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)



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CHECKED	CP	DRAWING NO.	REV. A
MFG. APPR.	DD	D3537	SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		WEARPAD	NTS
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D3537-9 WEARPAD
(MAKE FROM -1F)

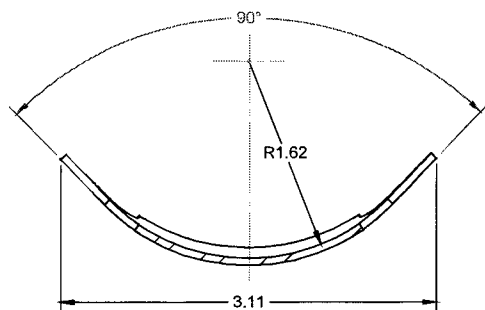
NOTES:

- 1) MATERIAL : MAKE FROM -1F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.19 lbs
- 8) APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)
- 9) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.02-0.04 THICK, PER DART QSI 005 4.9

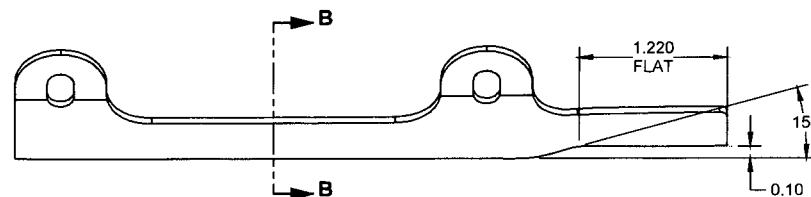


PRELIMINARY ISSUE

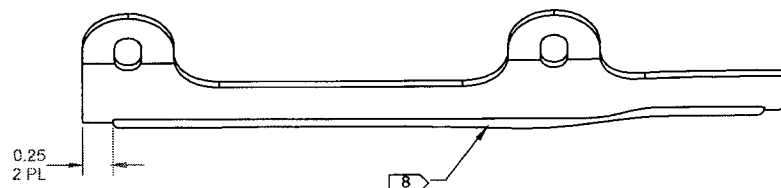
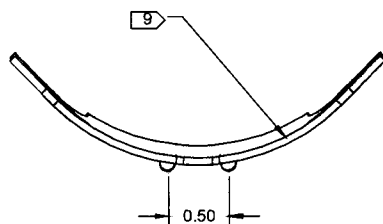
DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	KENT, WA	
CHECKED	CP	DRAWING NO.	REV. A
MFG. APPR.	DD	D3537	SHEET 4 OF 5
APPROVED		TITLE	SCALE
DE APPR.		WEARPAD	NTS
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SECTION B-B



D3537-11 WEARPAD
(BENDING DETAIL)
(MAKE FROM D3537-3F)



D3537-11 WEARPAD
(WELDMENT)

NOTES:

- 1) MATERIAL: MAKE FROM -3F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.25 lbs
- 8) APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)
- 9) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.02-0.04 THICK, PER DART QSI 005 4.9



PRELIMINARY ISSUE

DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	KENT, WA	
CHECKED	CP	DRAWING NO.	REV. XX
MFG. APPR.	DD	D3537	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		WEARPAD	NTS
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Purchase Order Receipt Listing

Page 1 of 2

Friday, July 24, 2015 12:53:05 PM

All amounts are calculated in domestic currency.

All Vendors PO ID PO29169 All Receipt Dates All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M/ Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID/Vendor Name VC-COP001 Thyssenkrupp Materials CA Ltd											
PO29169	1		M6061T6B0.125X2.5 f 00		7/21/2015	7/24/2015	20.0000	\$2.34	0.0000	0	\$46.70
CAD	No		6061T6 BAR .125 X f 2.50 m132835		12.0000	DCUSER		\$46.70	0.0000	0	
	2		M6061T6B2.000X01. f 250		7/21/2015	7/24/2015	12.0000	\$6.00	0.0000	0	\$72.05
	No		6061-T6 Bar 2.00 x f 1.25 m132835		12.0000	DCUSER		\$72.05	0.0000	0	
	3		M6061T6B0.750X00. f 750		7/21/2015	7/24/2015	12.0000	\$2.34	0.0000	0	\$28.02
	No		6061-T6 Bar .750 x f .750 m132835		12.0000	DCUSER		\$28.02	0.0000	0	
	4		M6061T6B0.500X05. f 000		7/21/2015	7/24/2015	12.0000	\$6.00	0.0000	0	\$72.05
	No		6061-T6 Bar .500 x f 5.00 m132835		12.0000	DCUSER		\$72.05	0.0000	0	
	5		M6061T6B0.187X04. f 000		7/21/2015	7/24/2015	12.0000	\$2.34	0.0000	0	\$28.02
	No		6061-T6 Bar .187 x f 4.00 m132835		12.0000	DCUSER		\$28.02	0.0000	0	
	6		M304S16GA st 304/316 Sheet .063 st m132835		7/21/2015	7/24/2015	192.0000	\$4.00	0.0000	0	\$768.58
	No				192.0000	DCUSER		\$768.58	0.0000	0	
	7		M304B0.625X3.000 f 304 BAR .625 X 3.00 f m132835		7/21/2015	7/24/2015	12.0000	\$20.70	0.0000	0	\$248.35
	No				12.0000	DCUSER		\$248.35	0.0000	0	

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL SHEET 304-2B
0600 Nom X 48.0000" X 96.0000"
PART NO.

PO/Rel 29169

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-945295-006

17Jul15

Pg 1/1

Signed by: _____



達錫鋼鐵股份有限公司
YUEN CHANG STAINLESS STEEL CO., LTD.

檢驗證明書

MILL TEST CERTIFICATE(S)

列印日期 ISSUE DATE: 2015/09/24

DAS
14
9-89

高雄市中區中正路235號13F
13F, No. 235 Jungjeng 4th Road, Chianjin
Chiui, Kaohsiung, Taiwan
TEL: 886-7-9695858 FAX: 886-7-9685768
http://www.yuenchang.com.tw

客戶名稱 Customer	Thyssenkrupp Steel Services A Division Of Thyssenkrupp Materials Na Inc 22355 West Eleven Mile Road Southfield Mi 48033 USA																
商品描述 Desc. Of Goods	Description Of Goods And/Or Services : Prime, Cold Rolled Stainless Steel Sheets, Slitted Edge, As Per ASTM A240/A480. Thyssenkrupp Materials NA PO PEC-264659																
項目 Item	鋼捲編號 Coil No.	爐號 Heat Number(S)	鋼種 Steel Grade	表面 Finish	產品尺寸 Thickness x Width x Length	淨重 Net Weight (KGS)											
AF009	CAAL0268-14	DNF010-ADG	304	2B	26GA x 48 x 96	1,727											
AF010	CCWR0003-18	AOA004-AAB	304	2B	20GA x 48 x 96	1,102											
AF011	CCWR0003-19	AOA004-AAB	304	2B	20GA x 48 x 96	1,104											
AF003	CATF0015-20	BOA005-AFD	304	2B	16GA x 48 x 96	1,736											
AF001	CATF0015-18	BOA005-AFD	304	2B	16GA x 48 x 120	1,086											
AF002	CATF0015-19	BOA005-AFD	304	2B	16GA x 48 x 120	1,087											
AF008	CCYL0003-54	AOA002-AAD	304	2B	14GA x 48 x 144	901											
AF006	CARS0019-13	BOB006-ABD	304	2B	12GA x 48 x 96	1,073											
化學成分 Chemical Analysis (%)																	
Item	C	Si	Mn	P	S	Cr	Ni	N	Cu	Mo	Others	T.S N/MM2	Y.S(0.2%) N/MM2	Elong (%)	HB	HRB	HV
AF009	0.045	0.480	1.158	0.037	0.0022	18.055	8.010	0.042	0.043			755	300	58.0		83.5	
AF010	0.023	0.300	1.380	0.029	0.0112	18.250	8.040	0.071	0.310	0.110		651	294	57.0			160.0
AF011	0.023	0.300	1.380	0.029	0.0112	18.250	8.040	0.071	0.310	0.110		651	294	57.0			160.0
AF003	0.050	0.430	1.110	0.039	0.0010	18.300	8.100	0.040	0.056	0.098		686	281	56.0		83.0	
AF001	0.050	0.430	1.110	0.039	0.0010	18.300	8.100	0.040	0.056	0.098		686	281	56.0		83.0	
AF002	0.050	0.430	1.110	0.039	0.0010	18.300	8.100	0.040	0.056	0.098		686	281	56.0		83.0	
AF008	0.042	0.510	0.980	0.033	0.0020	18.190	8.040	0.058				641	280	54.9		83.5	
AF006	0.040	0.440	1.070	0.030	0.0020	18.200	8.000	0.040	0.188	0.040		650	272	56.0		83.5	
茲證明本廠所列產品，均係材料規格製造及試驗，並符合規格之要求。 We hereby certify that the products described herein have been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification. 本產品無輻射污染，並且不含汞。The material described above is free from radiation contamination and mercury. 本證明書符合EN10204/Type 3.1規格。Inspection certificate in accordance with EN10204/Type 3.1. 本表所列產品均符合ASTM A240規格要求。All the above products conform to the requirements specified in ASTM A240. We Hereby Certifying The Material To ASTM A240/ A480 As Per EN 10204/ 3.1																	
												QC Manager 901509001 David Wang					
												For and on behalf of YUEN CHANG STAINLESS STEEL CO., LTD. Authorized Signature					



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO29169

Purchase Order Date 7/16/2015

PO Print Date 7/16/2015

Page Number 2 of 4

Order From : VC-COP001
THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"
TORONTO, ON M5W 5V8
CA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905 669 9444

Ship To Contact
Ship To Phone
Ship Via: VENDOR'S TRUCK
Slip Acct:

Buyer Linda Lacelle
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

						Line Total:	\$35.00
4	M6061T6B0.500X05.000	6061-T6 Bar .500 x 5.00	7/21/2015 Yes 7/21/2015	12.00 f	\$7.50	\$90.00	
as above						Line Total:	\$90.00
5	M6061T6B0.187X04.000	6061-T6 Bar .187 x 4.00	7/21/2015 Yes 7/21/2015	12.00 f	\$2.92	\$35.00	
as above						Line Total:	\$35.00
6	M304S16GA	304/316 Sheet .063	7/21/2015 Yes 7/21/2015	192.00 sf	\$5.00	\$960.00	
MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059/AMS 5513 (304)/AMS 5524 (316)/ASTM A240/ASME SA240						Line Total:	\$960.00

Note:

7/16/2015

B I L L O F L A D I N G
Ship From: THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 945295
Ship Date 20Jul15 at 12:13 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

B I L L O F L A D I N G

BACK ORDER

6) Our Order PEC-826392- 6 Your PO # 29169
STAINLESS STEEL SHEET 304-2B
0600 Nom X 48.0000" X 96.0000"

Heat Number Tag No
BOA005-AFD 435532

Quantity PCS MTR Wt LBS
192.00 SFT 6 462

TOTAL: Tags PCS LBS
5 10 550

Heat Number
103621 2 1-A-1
408691-7
41743-1
BOA005-AFD
Z00136096

*** Chemical Analysis ***

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
** REFERENCED ON IT **

TOTAL 2 BDLs 1 SKID GW 652 LBS

ITEM# 1 - 1 BDL
ITEM# 2 TO 4 - 1 BDL
ITEM# 5 - B/O
ITEM# 6 - 1 SKID

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA

Page: 2Continued

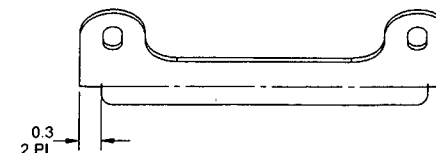
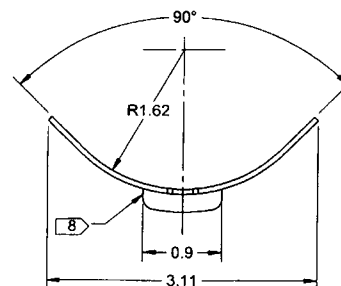
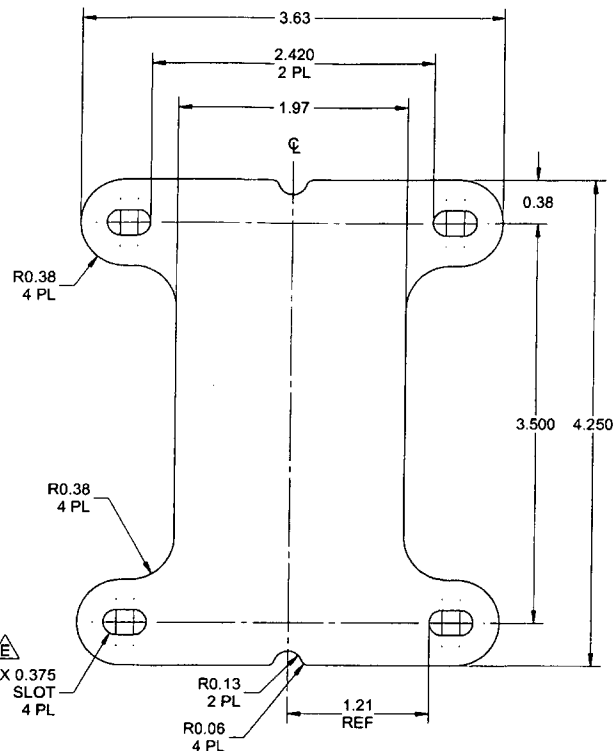
TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE



D3537-1F WEARPAD
(FLAT PATTERN)

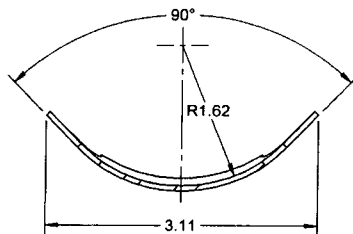
NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 16 GAUGE 0.063 THICK
PER MIL-S-5059 OR AMS 5513 OR 5524 OR ASTM A240 OR ASME SA240
REF DART SPEC. M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.42 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR
BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

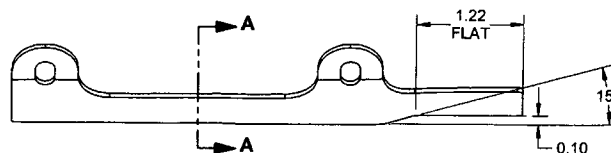
RELEASED
2015-12-07
EUN 15-651

REV.	DESCRIPTION	BY	DATE
E	-5 DELETED PART IS OBSOLETE. RE-FORMAT, NOTE 8 RE-WRITTEN FOR ROBOTIC WELDING. SHEETS 1 & 2 SLOT DIMENSION UPDATED.	AJS	15.09.28
D	RE-FORMAT DRAWING, ADD -9/-11 WEARPADS	DB	14.10.16
C	WIDEN TAB TO 0.380, WEL PATTERN	CB	07.04.13
B	ADD AMS5510 AND AMS 5524	CB	07.03.20
A	NEW ISSUE	CB	06.11.06
DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	EUGENE, OR	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	JLM	D3537	SHEET 1 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPAD	NTS
DATE	15.09.28	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

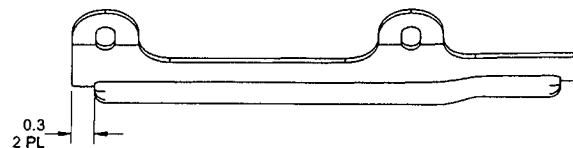
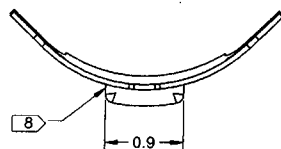
APPROVED



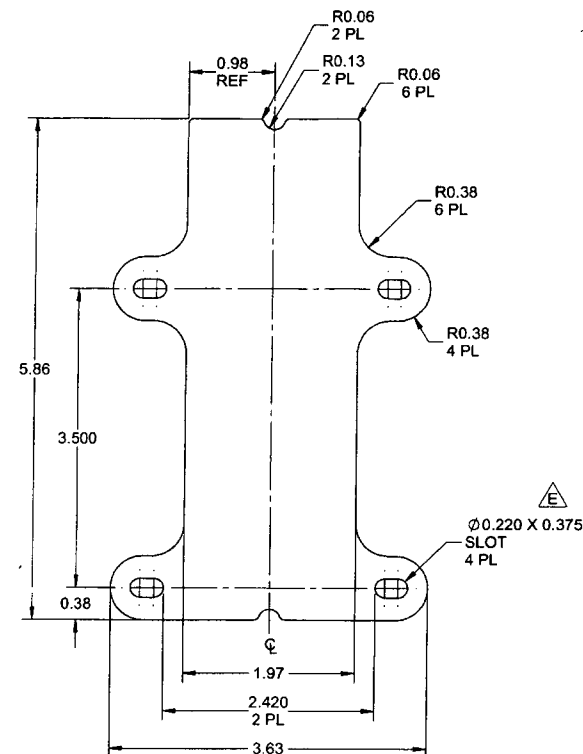
SECTION A-A



**D3537-3 WEARPAD
(BENDING DETAIL)
(MAKE FROM D3537-3F)**



**D3537-3 WEARPAD
(WELDMENT)**



**D3537-3F WEARPAD
(FLAT PATTERN)**

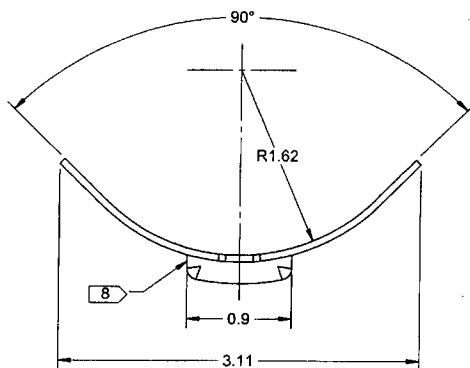
NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 16 GAUGE 0.063 THICK
PER MIL-S-5059 OR AMS 5513 OR 5524 OR ASTM A240 OR ASME SA240
REF DART SPEC. M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.50 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR
BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

RELEASED
R 2015-12-07

APPROVED

DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	EUGENE, OR	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	JLM	D3537	SHEET 2 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPAD	NTS
DATE	15.09.28	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR DISCLOSED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D3537-7 WEARPAD
(MAKE FROM D3537-3F)

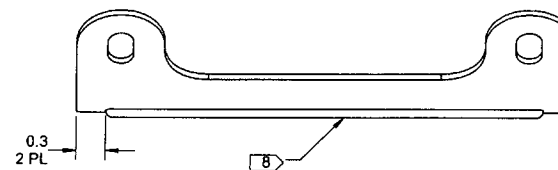
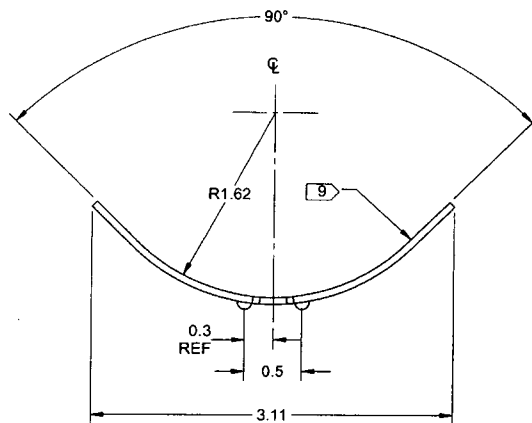
NOTES:

- 1) MATERIAL: MAKE FROM -3F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.50 lbs
- 8) BUILDUP HARD SURFACING 0.17 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

RELEASED
2015-12-07

APPROVED

DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	EUGENE, OR	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	JLM	D3537	SHEET 3 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPAD	NTS
DATE	15.09.28	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC.	
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D3537-9 WEARPAD
(MAKE FROM D3537-1F)

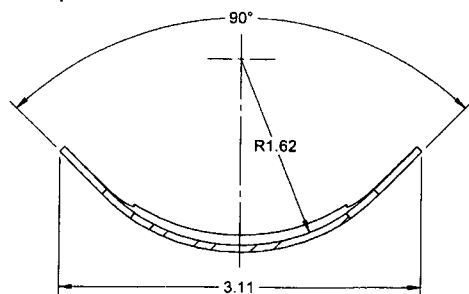
NOTES:

- 1) MATERIAL : MAKE FROM -1F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.19 lbs
- 8) APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)
- 9) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.02-0.04 THICK, PER DART QSI 005 4.9

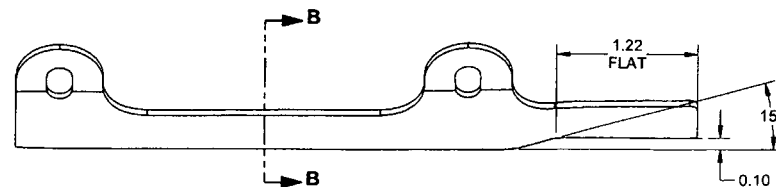
RELEASED
2015-12-07
OM

APPROVED

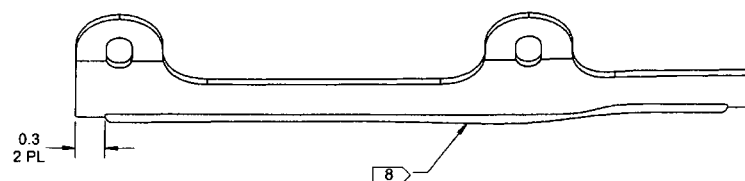
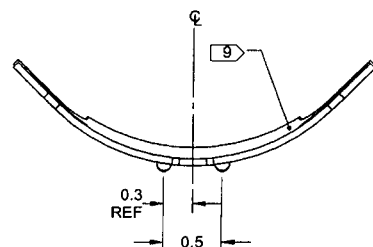
DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	EUGENE, OR	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	JLM	D3537	SHEET 4 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPAD	NTS
DATE	15.09.28	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC.	
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SECTION B-B



D3537-11 WEARPAD
(BENDING DETAIL)
(MAKE FROM D3537-3F)



D3537-11 WEARPAD
(WELDMENT)

NOTES:

- 1) MATERIAL: MAKE FROM -3F
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.25 lbs
- 8) APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR APPLY HARD SURFACING WELD BEAD 0.06 - 0.13 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)
- 9) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.02-0.04 THICK, PER DART QSI 005 4.9

RELEASED
2015-12-07

APPROVED

DESIGN	CB	DART AEROSPACE USA, INC.	
DRAWN	AJS	EUGENE, OR	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	JLM	D3537	SHEET 5 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPAD	NTS
DATE	15.09.28	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS RELEASED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ENGINEERING CHANGE NOTICE **DART AEROSPACE LTD**

Date:	15.12.07	Job No.:		ADR Yes/No:	N	ADR Date:		ECN #:	15- 651
Product No.:	D119-646	Created By:	DB	Approved By:	DA				
Product Name:	SKIDTUBE INSTALLATION			Checked By:	DB				

Distribution	Reqd	Resp	Initial / Date (YY/MM/DD)
Director of Operations	N		
Production Manager / Coord.	Y	MP / MF	YMF 15-12-10
Purchasing Manager / Purchasing Coord.	N	LL / CL	
Production Engineering Coord.	Y	DD / JLM	DA 15-12-10
Production Engineering Coord.	N	DL	
Customer Order Processing	N	SL / BG	

Distribution	Reqd	Resp	Initial / Date (YY/MM/DD)
DQA / QA Coord.	Y	PS / ED	PS 15/12/10
QC Coordinator	Y	PD	PS 15-12-10
Customer Support	Y	SW / LM	DA 15.12.10
Customer Technical Support	Y	MB / HS	DA 15.12.10
Marketing	N	SL / WR	
Sales Support Manager	N	CP	

Reason for Change: ADD D5101-7 CROSSBOLT SPACER, D5101-047 CROSSBOLT SPACER ASSY

Documents Affected:
D5101 REV B,

IF APPLICABLE: NCR: _____ PAR: _____ CAR: _____ CIR: _____ URF: 15-560

PAPERWORK UPDATE ☐ PARTS MUST COMPLY ☒ PREVIOUS PARTS SATISFACTORY ☐

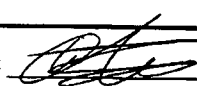
#	Quality Assurance Actions	Reqd	Resp	Notes	Complete
1	Notify Previous Customers	N			
2	Notify Eurocopter France	N			
3	Notify Augusta Westland	N			
4	Manufacturing Licensing Agreement Update	N			

#	Engineering Actions	Reqd	Resp	Notes	Complete
5	Required Documents/Drawings/Item ID's Under Review (URF)	N			
6	Update Master Document List (MDL)	N			
7	Update Document Record (DR)	N			
8	Update Product Compatibility Matrix	N			
9	Notify TC / FAA of Change (eg. ICA, 8110-3)	N			
10					

#	Document Control Actions	Reqd	Resp	Notes	Complete
11	Move / Update Electronic Files / Design Journal	Y	KJ		15.12.10
12	Update Product Specification Files (Bluefiles)	N			
13	Update Approved/Preliminary Dwg PDF Files	Y	KJ		15.12.10
14	Update Product Development Summary (STC applications)	N			
15	Update QSI 021 (TC/FAA STC) and/or STC Approval List	N			
16	Create/Update Parts / STC Database	Y	KJ		15.12.10
17	Update / Verify Airworthiness Release Certificate Database	Y	KJ		15.12.10
18	Create / Update Change Record Form / Item Card Database	N			
19	Create / Update Packaging Process Plan (PPP)	N			
20	Red Decals required on Packaging Process Plan (PPP)?	N			
21	Update Controlled Supplier Documents (Qpulse) Database	N			
22	Update Grey Project Binder / Electronic Project Folder	N			
23	Update D-Part / M-Drawing / DSI / DEO Master Binders	Y	KJ		15.12.10
24	Update "Royalty Paid to" attribute (Parts sold under Dart USA STC's)	N			
25					

Description / Action:

RELEASE DRAWING D5101 TO ALLOW -71-047 PRODUCTION. RELATED DOCUMENT REVISIONS (MDL, IIN, TO BE RELEASED ON EC 15-560)

ECN Verified & Complete:  Date: DEC 15 2015